

Claim 1. (Currently amended) A coating composition with spectral selectivity comprising

A) a) a binder having which has a transmission of 60% or more in the near-infrared wavelength range of 0.7 to 2.5 μm and a transmission of 40% or more in the thermal infrared wavelength range; and is selected from at least one of the following groups:

- a) aqueous dispersions and emulsions of acrylates, styrene acrylate, polyethylene, polyethylene oxidate, ethylene acrylic acid copolymer, methacrylate, vinyl pyrrolidone vinyl acetate copolymers, polyvinyl pyrrolidone, polyisopropyl acrylate, polyurethanes, terpane and rosin resins;
- b) binders containing solvents, comprising acryl, cyclised and butyl rubber, hydrocarbon resins, terpene resins, nitro, acetyl and ethyl cellulose, α -methyl styrene acrylonitrile copolymers, polyester imide, polyurethanes, aliphatic polyurethanes, chlorosulfonated polyethylene; and
- c) thermoplastic materials selected from the group consisting of polyolefins and polyvinyl compounds, polytetrafluoroethylene, and polyamide,;

B) b) first pigments, which absorb 40% or more of the visible light in the wavelength range of 0.35 to 0.7 μm , have a backscatter of 40% or more in the near-infrared range of 0.7 to 2.5 μm , an absorption of 60% or less in the thermal infrared wavelength range and are selected from at least one of the following groups:

- a) inorganic pigments, selected from the group consisting of lead, zinc, iron, chromium, cadmium, barium,

- titanium, cobalt, aluminum and silicon compounds;
- b) organic pigments, comprising natural dyes of animal and plant origin and synthetic organic dyes and pigments;
- C) ~~e) second pigments having a backscatter or reflection of 40% or more in thermal infrared wavelength range which have a transmission of ≥20% in the wavelength range of 5 to 25 μm, are platelet-shaped and are selected from at least one of the following groups:~~
- a) metal or metal alloys, selected from aluminum, aluminum bronze, antimony, chromium, iron, gold, iridium, copper, magnesium, molybdenum, nickel, palladium, platinum, silver, tantalum, bismuth, tungsten, zinc, tin, bronze, brass, nickel silver, a nickel/chromium alloy, niccolite, constantan, manganin and steel;
- b) electrically non-conducting materials coated and/or covered with metal or metal alloys, said metals being selected from aluminum, aluminum bronze, antimony, chromium, iron, gold, iridium, copper, magnesium, molybdenum, nickel, palladium, platinum, silver, tantalum, bismuth, tungsten, zinc, tin, bronze, brass, nickel silver, a nickel/chromium alloy, niccolite, constantan, manganin, steel or electrically conducting stannous oxide; and
- c) laminated pigments composed of at least three layers, the middle layer having a smaller refractive index than the outer layers and the materials thereof being selected from the group of materials.

Claim 2. (Previously presented) A coating composition with spectral selectivity according to claim 1, characterized in that

- a) the binder has a transmission of 75% or more in the near-

- infrared wavelength range of 0.7 to 2.5 μm and a transmission of 50% or more in the thermal infrared wavelength range;
- b) the first pigments absorb 60% or more of the visible light in the wavelength range of 0.35 to 0.7 μm , have a backscatter of 50% or more in the near-infrared range of 0.7 to 2.5 μm and have an absorption of 50% or less in the thermal infrared wavelength range; and
 - c) the second pigments have a backscatter or reflection of 50% or more in the thermal infrared wavelength.

Claims 3. (Cancelled)

Claims 4. (Cancelled)

Claim 5. (Previously presented) A coating composition having spectral selectivity according to claim 1, characterized in that the first pigments are transparent or translucent pigments.

Claims 6. (Cancelled)

Claim 7. (Previously presented) A coating composition with spectral selectivity according to claim 1, characterised in that the second pigments are surface-treated, platelet-shaped metal pigments, the surfaces of which have been treated in such a manner that they absorb more than 40% of the visible light in the wavelength range of 0.35 to 0.7, have a reflection of more than 50% in the near-infrared range of 0.7 to 2.5 μm and have a reflection of more than 40%, in the thermal infrared wavelength range.

Claim 8. (Withdrawn) A coating having spectral selectivity

according to at least one of the claim 1, characterised in that the second pigments are approximately spherical and are substantially single crystals, the mean diameter d of the single crystals being determined by the formula

$$d=14 \mu\text{m}/2.1 \cdot (n_{T\ 14} - n_{B\ 14}),$$

wherein $n_{T\ 14}$ is the refractive index of the spherical particle at a wavelength of 14 μm and $n_{B\ 14}$ is the refractive index of the binder at a wavelength of 14 μm .

Claim 9. (Withdrawn) A coating with spectral selectivity according to claim 1, characterised in that the second pigments are selected from the group consisting of metal sulfides, metal selenides, metal fluorides, metal carbonates, metal antimonites, metal oxides, barium titanate, barium ferrite, calcium sulfate, barium sulfate and of mixed crystals of said substances.

Claim 10. (Withdrawn) A coating with spectral selectivity according to claim 1, characterised in that the second pigments are hollow spheres having a diameter of 10 to 100 μm , preferably 10 to 30 μm , the wall of which consists of at least one material selected from acrylate, styrene acrylate, acrylonitril copolymer, polyethylene, polyethylene oxide, chlorosulfonated polyethylene, ethylene acrylic acid copolymer, methacrylate, vinyl pyrrolidone vinyl acetate copolymer, vinylidene chloride copolymer, polyvinyl pyrrolidone, polyisopropyl acrylate, polyurethane, from cyclised rubber, butyl rubber, hydrocarbon resin, α -methyl styrene acrylonitrile copolymer, polyester imide, acrylic acid butyl ester, polyacrylic acid ester.

Claim 11 (Withdrawn). A coating with spectral selectivity according to claim 1, characterised in that the second pigments are a mixture of single crystals and hollow spheres.

Claim 12. (Previously presented) A coating composition with spectral selectivity according to claim 1, characterised in that the second platelet-shaped pigments in the binder are aligned in such a manner that they form an angle of 30° to 60° to the normal line of the surface.

Claim 13. (Previously presented) A coating composition with spectral selectivity according to claim 1, characterised in that additional pigments are used to achieve a matting effect, said additional pigments having a transmission of 40% or more, in the thermal infrared wavelength range and being approximately spherical and substantially being single crystals, the mean diameter d of the single crystal being determined by the formula

$$d = \lambda / 2.1 \cdot (n_T - n_B),$$

wherein n_T is the refractive index of the spherical particle at the wavelength λ , n_B is the refractive index of the binder at a wavelength of λ and λ is a wavelength in the range of visible light.

Claim 14. (Currently Amended) A coating composition with spectral selectivity according to claim 1 or 13, comprising an additional pigment or pigments, wherein the additional pigment or pigments are selected from the group consisting of metal sulfides, metal selenides, fluorides, carbonates, antimonides, metal oxides, barium

titanate, barium ferrite, calcium sulfate, barium sulfate and from mixed crystals of representatives of the groups enumerated.

Claim 15. (Previously Presented) A coating composition with spectral selectivity according to claim 1, characterised in that opaque polymer pigments or organic pigments are used as additional pigments for matting purposes, said pigments having a transmission of 30% or more in the thermal infrared wavelength range, having or forming a cavity in the dry state and the size of the polymeric or organic pigments being selected in such a manner that their mean diameter is 0.2 to 2.0 μm .

Claim 16. (Previously Presented) A coating composition with spectral selectivity according to claim 1, characterised in that transparent red, green and blue pigments are used in addition to the first pigments.

Claim 17. (Cancelled)

Claim 18. (Withdrawn) A method of coating surfaces in motorvehicles comprising the step of applying a coating with spectral selectivity according to claim 1.